

**Claims**

What is claimed is:

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1. A method of receiving, decoding and distributing video signals from a telecommunications network to a plurality of televisions locatable in at least two separate locations within a residential environment via a residential gateway, the method comprising:

10 receiving at least one channel select command from one of a plurality of remote control devices associated with a respective one of the plurality of televisions, wherein at least a first one of the plurality of remote control devices transmits the channel select command directly to a receiver within the residential gateway;

receiving a video signal from the telecommunications network;

transporting the video signal over a video bus to a video processor;

20 processing the video signal to produce at least one television signal corresponding to the at least one channel select command; and

transmitting the at least one television signal to the at least one television.

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*Part 1*

2. The method of claim 1, wherein said receiving at least one channel select command includes receiving channel select commands from an optical remote control device associated with a television located in close proximity to the residential gateway 5 at an optical receiver within the residential gateway.

3. The method of claim 1, wherein said receiving at least one channel select command includes receiving channel select commands from wireless remote control devices associated with 10 televisions remotely located from the residential gateway.

4. The method of claim 3, wherein said receiving channel select commands from wireless remote control devices includes:

transmitting wireless signals, including the channel select commands, from the wireless remote control devices to remote antennae packages located in close proximity to and coupled to the remotely located televisions;

receiving the wireless signals at the remote antennae packages; and

20 transmitting the wireless signals from the remote antennae packages to the residential gateway over media.

5. The method of claim 4, wherein said transmitting the wireless signals from the remote antennae packages includes

transmitting the wireless signals from the remote antennae packages to a media interface device over the media, the media connecting the remotely located televisions to the media interface device;

5 receiving the wireless signals at the media interface device;

extracting the channel select commands from the wireless signals received at the media interface device; and

transmitting the channel select commands from the media  
10 interface device to a remote control processor within the residential gateway.

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6. The method of claim 5, wherein the media is coaxial cable and the media interface device is a coaxial interface device.

7. The method of claim 5, wherein the media interface device includes a remote antennae module for receiving the wireless signals and extracting the channel select commands  
20 therefrom.

8. The method of claim 5, wherein the wireless remote control devices are UHF remote control devices and the wireless signals are UHF signals.

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9. The method of claim 8, wherein the UHF signals are transmitted at 433 MHz.

10. The method of claim 5, wherein the channel select commands are extracted as a 1 KHz signal from the wireless signal.

11. The method of claim 7, further comprising extracting other signals which have also been transported over the media, 10 wherein said extracting is performed by a diplexer within the media interface device.

12. The method of claim 11, further comprising adjusting the impedance of a subset of the other signals so that the subset of the other signals can be processed by the residential gateway, wherein said adjusting is performed by a balun within the media interface device.

13. The method of claim 1, wherein said transmitting the at least one television signal includes:

transmitting the at least one television signal to a media interface device;

processing the at least one television signal within the media interface device; and

transmitting the processed television signal from the media interface device to the at least one television.

14. The method of claim 13, wherein said processing the at  
5 least one television signal includes splitting the at least one television signal so that it can be transmitted to separate locations.

15. The method of claim 14, wherein said processing the at  
10 least one television signal further includes diplexing other signals onto the media with the at least one television signal.

16. The method of claim 15, wherein said processing the at least one television signal further includes changing the  
15 impedance of a subset of the other signals so they can be transmitted over the media.

17. The method of claim 14, wherein said processing the at least one television signal further includes combining each of  
20 the at least one television signal prior to said splitting at least one television signal, and said splitting the at least one television signal includes splitting the combined television signal.

18. A residential gateway for distributing video signals to a plurality of televisions locatable within at least two separate locations in a residential environment, said residential gateway comprising:

5 a receiver for directly receiving channel select commands  
from remote control devices associated with the televisions;

a network interface module for receiving signals, including video signals, from a telecommunications network, wherein the received video signals correspond to the channel select commands;

10 a video processor for processing the video signals to produce at least one television signal; and

a video bus for transporting the video signals to said video processor.

19. The residential gateway of claim 18, wherein said

receiver is an optical receiver which receives channel select commands from an optical remote control device associated with a television located in close proximity to the residential gateway.

20. The residential gateway of claim 18, further comprising  
a remote control module for processing channel select commands  
received at said receiver and other channel select commands  
transmitted to the residential gateway over media.

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21. The residential gateway of claim 18, further comprising remote antennae packages in close proximity to and coupled to televisions that are remotely located from the residential gateway, the remote antennae packages receiving wireless signals, 5 including channel select commands, from wireless remote control devices associated with the remotely located televisions, and modulating the wireless signals over media to the residential gateway.

10 22. The residential gateway of claim 21, further comprising a media interface device coupled to said remote control antennae packages with the media, said media interface device receiving the wireless signals and extracting the channel select commands from the wireless signals.

15 23. The residential gateway of claim 22, wherein the media is coaxial cable and said media interface device is a coaxial interface device.

20 24. The residential gateway of claim 22, wherein said media interface device includes a remote antennae module for receiving the wireless signal and extracting the channel select commands.

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25. The residential gateway of claim 22, wherein the wireless remote control devices are UHF remote control devices and the wireless signals are UHF signals.
- 5       26. The residential gateway of claim 25, wherein the UHF remote control devices transmit a 433 MHz UHF signal.
- 10      27. The residential gateway of claim 26, wherein said remote antennae package modulates the 433 MHz UHF signal over the media.
- 25      28. The residential gateway of claim 24, wherein said remote antennae module extracts the channel select commands as a 1 KHz signal from the wireless signal.
- 20      29. The residential gateway of claim 22, wherein said media interface device includes a diplexer for extracting other signals from the media or transmitting other signals over the media.
- 25      30. The residential gateway of claim 29, wherein said media interface device further includes a balun for adjusting the impedance of a subset of the other signals so that the subset of the other signals can be processed by the residential gateway or can be transmitted over the media.

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31. The residential gateway of claim 22, wherein said media interface device is directly connected to the residential gateway.

5       32. The residential gateway of claim 19, further comprising a media interface device for processing the at least one television signal and transmitting the processed television signal to the at least one television.

10       33. The residential gateway of claim 32, wherein said media interface device includes a splitter for splitting the at least one television signal so that it can be transmitted to separate locations.  
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15       34. The residential gateway of claim 32, wherein said media interface device further includes a combiner for combining each of the at least one television signal, to form a combined television signal.

20       35. A method for receiving and decoding signals from a telecommunications network at a residential gateway, and transmitting decoded signals from the residential gateway to a plurality of devices including multiple televisions, the method comprising:

connecting each of the plurality of devices and the telecommunications network to the residential gateway so that all communications between the devices and the telecommunications network must pass through the residential gateway;

5       selecting a television channel to view for at least one of the multiple televisions by programming an associated remote control device to transmit a channel select command, wherein the channel select commands are received by a receiver within the residential gateway;

10      transmitting the at least one channel select command to the telecommunications network;

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15      receiving a video signal from the telecommunications network;

20      processing the video signal into at least one television signal corresponding to the at least one channel select command, the processing performed by a video processor; and

25      transmitting the at least one television signal to the appropriate television.

36. The method of claim 35, wherein said connecting each of the plurality of devices and the telecommunications network to the residential gateway includes connecting a television located in close proximity to the residential gateway to the residential gateway with S-video cables.

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37. The method of claim 35, wherein said connecting each of the plurality of devices and the telecommunications network to the residential gateway includes connecting televisions remotely located from the residential gateway to the residential gateway 5 via remote antennae packages located in close proximity to and connected to the remotely located televisions, media, and a media interface device connected to the residential gateway and to each of the remote antennae packages with the media.

10 38. The method of claim 37, wherein the media interface device is directly connected to the residential gateway.

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15 39. The method of claim 35, wherein said selecting a television channel includes selecting a television channel for a television located in close proximity to the residential gateway by programming an associated optical remote control device which transmits an optical signal, including a channel select command, to the receiver within the residential gateway.

20 40. The method of claim 35, wherein said selecting a television channel includes selecting a television channel for televisions remotely located from the residential gateway by programming associated wireless remote control devices which transmit wireless signals, including channel select commands.

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41. The method of claim 40, wherein said programming associated wireless remote control devices includes:

transmitting the wireless signals from the associated wireless remote control devices to remote antennae packages located in close proximity to the remotely located televisions;

5 receiving the wireless signals at the remote antennae packages; and

transmitting the wireless signals from the remote antennae packages to the residential gateway over media.

42. The method of claim 41, wherein said transmitting the wireless signals from the remote antennae packages includes

transmitting the wireless signals from the remote antennae packages to a media interface device over the media, the media connecting the remotely located televisions to the media interface device;

receiving the wireless signals at the media interface device;

extracting the channel select commands from the wireless signals received at the media interface device; and

transmitting the channel select commands from the media interface device to a remote control processor within the residential gateway.

43. The method of claim 42, wherein the media interface device includes a remote antennae module for receiving the wireless signals and extracting the channel select commands therefrom.

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44. The method of claim 35, wherein said transmitting the television signals includes transmitting the television signals to a television in close proximity to the residential gateway as S-video signals.

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45. A method for receiving and decoding signals from a telecommunications network at a residential gateway, and transmitting the decoded signals from the residential gateway to a plurality of devices including multiple televisions, the method comprising:

connecting the residential gateway to the telecommunications network and to at least one television that is remotely located from the residential gateway;

selecting a television channel to view for the at least one television by programming associated wireless remote control devices, wherein the wireless remote control devices transmit channel select commands as wireless signals to remote antennae packages connected to the at least one television, the remote antennae packages receive the wireless signals and transmit the wireless signals over media to a media interface device which

demodulates the wireless signals and extracts the portion corresponding to the channel select commands;

transmitting the channel select commands to the telecommunications network;

5 receiving a video signal from the telecommunications network;

processing the video signal to produce television signals corresponding to the channel select commands, wherein the processing is performed by a video processor; and

10 transmitting the television signals to the at least one television.

46. A residential gateway for receiving and decoding signals from a telecommunications network and transmitting the decoded signals to a plurality of devices including multiple televisions, the residential gateway comprising:

a network interface module for transmitting upstream signals, including channel select commands, to the telecommunications network and receiving downstream signals,

20 including video signals, from the telecommunications network;

a video processor for processing the video signals into at least one television signal corresponding to at least one channel select command, and transmitting the at least one television signal to the corresponding television;

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a remote control module for processing the channel select commands, wherein at least one of the channel select commands is extracted from a wireless signal, the wireless signal being transmitted from a wireless remote control device to a remote antennae package connected to the associated television, the remote antennae package transmitting the wireless signal over media to a media interface device which demodulates the wireless signal and extracts the portion corresponding to the channel select command.

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47. A residential gateway for receiving and decoding signals from a telecommunications network and transmitting the decoded signals to a plurality of devices including multiple televisions, the residential gateway comprising:
- 15 a network interface module for transmitting upstream signals, including channel select commands, to the telecommunications network and receiving downstream signals, including video signals, from the telecommunications network;
- 20 a video processor for decoding the video signals into at least one television signal corresponding to at least one channel select command, and transmitting the at least one television signal to the corresponding television;
- 25 a remote antennae package located in close proximity to and connected to a remotely located television, said remote antennae package receiving a wireless signal, including a channel select

command, from a wireless remote control device associated with the remotely located television and modulating the wireless signal over media; and

a media interface device connected to the media and the  
5 residential gateway for demodulating the wireless signal, extracting the portion corresponding to the channel select command, and transmitting the channel select command to the residential gateway.

10 48. The residential gateway of claim 47, wherein said media interface device includes:

a remote antennae module for extracting the channel select commands from the wireless signal;

a splitter for splitting the at least one TV signal, so that the at least one TV signal can be provided to multiple locations;

a balun for adjusting the impedance of network signals to and from the telecommunications network so that they can be transmitted over the media; and

20 a diplexer for extracting from the media network signals from the telecommunications network and inserting onto the media network signals from the residential gateway.

49. The residential gateway of claim 48, wherein said media interface device further includes a combiner for combining the at

least one TV signal into a combined TV signal and said splitter splits the combined TV signal.

50. A media interface device for directional distribution  
5 of signals to multiple devices over a media, the media interface comprising:

a first connector for receiving a first signal in a first direction;

a second connector for receiving a second signal in the

10 first direction and transmitting a third signal in a second direction;

a third connector for transmitting the first signal and the second signal over the media in the first direction and receiving the third signal and a fourth signal over the media in the second direction;

a diplexer for extracting the third signal from the media in the second direction and inserting the second signal onto the media in the first direction;

20 a remote antennae module for receiving the fourth signal and extracting a fifth signal therefrom; and

a fourth connector for transmitting the fifth signal in the second direction.

51. The media interface device of claim 50, further  
25 comprising a balun for adjusting the impedance of the second

signal so that it can be inserted onto the media by said diplexer, and adjusting the impedance of the third signal extracted from the media by said diplexer so it can be transmitted over said connector.

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52. The media interface device of claim 50, further comprising:

a splitter for splitting the first signal into two identical first signals; and

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comptd* 10 a fifth connector for transmitting one of the two identical first signals in the first direction.

20 53. The media interface device of claim 50, further comprising a combiner, wherein said first connector includes multiple connectors and the first signal includes multiple signals, each multiple signal associated with a respective one of the multiple connectors and said combiner combines each of the multiple signals together to form a combined signal, and said third connector transmits the combined signal and the second signal over the media in the first direction.

25 54. The media interface device of claim 50, further comprising an X by Y splitter and additional connectors, wherein X and Y are integers, said first connector includes Y connectors and the first signal includes Y signals, each Y signal associated

with a respective Y connector, and said X by Y splitter combines the Y signals to form a combined signal and splits the combined signal into X identical combined signals, said third connector transmits the combined signal and the second signal over the media in the first direction, and said additional connectors transmit the combined signal in the first direction.

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55. The media interface device of claim 50, wherein the media interface device connects directly to a residential gateway and distributes signals between the residential gateway, a telecommunications network, and multiple devices communicating with the telecommunications network via the residential gateway.

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56. The media interface device of claim 55, wherein the first signal is a TV signal, the second signal is an upstream network signal, the third signal is a downstream network signal, the fourth signal is a wireless signal, the fifth signal is a channel select command, the first direction is away from the residential gateway, and the second direction is toward the residential gateway.

57. A media interface device for connecting to a residential gateway and distributing signals to and from the residential gateway over a media, the media interface comprising:

a first connector for receiving and transmitting signals over a media, the received signals including wireless signals from wireless remote control devices associated with remotely located TVs and downstream network signals from a 5 telecommunications network, the transmitted signals including TV signals and upstream network signals;

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a second connector for receiving the TV signals from the residential gateway;

10 a third connector for receiving the upstream network signals from the residential gateway and transmitting the downstream network signals to the residential gateway;

a diplexer, connected to said first connector, for extracting the downstream network signals from the media and inserting the upstream network signals onto the media;

15 a balun, connected to said diplexer, for adjusting the impedance of the upstream network signals so they can be inserted onto the media by said diplexer, and for adjusting the impedance of the downstream network signals so they can be processed by the residential gateway; and

20 a remote antennae module, connected to said diplexer, for extracting the channel select commands from the wireless signals and transmitting the channel select commands to the residential gateway.

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58. The media interface device of claim 57, further comprising an X by Y splitter and X-1 additional connectors, wherein X and Y are integers, said second connector includes Y connectors each receiving a respective TV signal, said X by Y splitter combines the respective TV signals to form a combined TV signal and splits the combined signal into X identical combined TV signals, said diplexer inserts the upstream network signals onto the media with the combined TV signal, and said combined TV signal is provided to the X-1 additional connectors.

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